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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/825,403	04/15/2004	Walter Wohlrab	WOHLRAB-8	8167

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EXAMINER

MACKEY, JAMES P

ART UNIT PAPER NUMBER

1722

DATE MAILED: 06/21/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/825,403	Applicant(s) WOHLRAB ET AL.	
	Examiner James Mackey	Art Unit 1722	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-23 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☒ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>4/15/04; 12/6/04</u> . | 6) <input type="checkbox"/> Other: ____. |

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1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1-13, 15, 16 and 19-22 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 1, line 12, "the shaft of the plasticizing shaft" is indefinite, and should be changed to --the shaft of the plasticizing screw--.

In claim 6, line 4, "the rotor of the second electric motor" lacks proper antecedent basis in the claim.

In claim 15, line 2, "the pump" lacks proper antecedent basis in the claim.

In claim 16, line 4, "the pump" lacks proper antecedent basis in the claim.

In claim 19, line 4, "the rotor of the second electric motor" lacks proper antecedent basis in the claim.

In claim 22, line 4, "the shaft of the plasticizing shaft" is indefinite, and should be changed to --the shaft of the plasticizing screw--.

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-3, 9, 11 and 12 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Japanese Patent Document 11-138597 (Figures 3-5).

Japan '597 teaches a hybrid injection unit for an injection molding machine comprising a plasticizing screw S having a shaft and received in a cylinder 11, a first electric motor 20 operatively connected to the screw shaft for rotating the screw, a second electric motor 3 operatively connected to the screw shaft for axially displacing the screw, a hydraulic pressure source including a variable capacity pump 44, piston-cylinder unit 5 operatively connected to the pressure source for support of the second motor 3 on housing 13, 26 (as clearly shown in Figure 3), and a traverse 15 acted upon by one end of the piston-cylinder unit and rotatably supporting the screw shaft, the traverse acting on the screw shaft between a force introduction point of the second motor into the screw shaft and the screw. Japan '597 further teaches that the two parallel piston-cylinder units may be provided (Figure 5).

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

7. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various

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claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8. Claims 4-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Japanese Patent Document 11-138597 (Figures 3-5) in view of either Pickel (U.S. Patent 5,540,495) or EP 1,162,053 (Figure 1).

Japan '597 discloses the apparatus substantially as claimed, as described above, and further discloses a ball nut 28 and spindle 27 assembly for transferring the rotation of second motor 3 to the screw. Japan '597 does not disclose the spindle as being part of the screw shaft and cooperating with the nut directly operated by a rotor of the second motor, and does not disclose the first motor having a rotor mounted in fixed rotative engagement with the screw shaft. However, such an arrangement of the first and second motors cooperating the the injection screw shaft is known in the art, as evidenced by either Pickel or EP '053, and therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Japan '597 by providing the rotors of the first and second motors cooperating with the injection screw shaft via a fixed rotative engagement (first motor) and spindle nut directly operated by the rotor (second motor), as is conventional in the art as shown in either Pickel or EP '053.

9. Claims 10, 13-15, 22 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Japanese Patent Document 11-138597 (Figures 3-5) in view of Holzschuh (U.S. Patent 5,580,585; col. 2, lines 40-45, and col. 3, lines 21-28).

Japan '597 discloses the apparatus substantially as claimed, as described above, except for the hydraulic pressure source including a speed-controlled electric motor for driving the pump, except for a double-acting piston-cylinder unit fluidly connected to the pressure source for axially displacing the hybrid injection unit, and except for a mold clamping unit operatively connected to the pressure source. Holzschuh discloses an injection molding machine comprising a hydraulic pressure source including a pump 14 driven by a speed-controlled electric motor 15 and being connected to a plurality of hydraulic components of the injection molding machine, including a nozzle displacement cylinder 3a, 3b and a mold clamping cylinder unit 4 (col. 3, lines 21-28) for increasing the efficiency of the hydraulic system while reducing the operational costs and losses of the hydraulic fluid (col. 2, lines 40-45). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Japan '597 by providing the hydraulic pressure source pump with a speed-controlled electric motor, the pump being connected to all of the hydraulic components of the injection molding machine including a piston-cylinder unit for axially displacing the injection unit (and associated nozzle) and a piston-cylinder unit for mold clamping, as disclosed in Holzschuh, in order to increase the efficiency of the hydraulic system while reducing the operational costs and losses of hydraulic fluid. It would have been further obvious to a skilled artisan to have provided the piston-cylinder unit for axially displacing the injection unit (and associated nozzle) as a double-acting piston-cylinder unit (claim 13) as is well known and conventional in the art, in order to facilitate the back-and-forth axial movement of the injection nozzle.

10. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Japanese Patent Document 11-138597 (Figures 3-5) in view of Holzschuh, as applied to claims 10, 13-15, 22 and

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23 above, and further in view of either Wohlrab (U.S. Patent 5,773,050) or Kamp et al. (U.S. Patent 5,261,810; col. 3, lines 60-61).

Japan '597 in view of Holzschuh discloses the apparatus substantially as claimed, as described above, except for the clamping unit including a spindle-nut assembly and associated hydraulic motor for driving the spindle-nut assembly. Each of Wohlrab and Kamp et al. disclose a mold closing/clamping unit including a spindle-nut assembly driven by a motor, and Kamp et al. further disclose that the motor may be an electric servomotor "or equivalent motor" (col. 3, lines 60-61). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Japan '597 with the features of Holzschuh, as described above, and including a spindle-nut assembly driven by a motor, as disclosed in each of Wohlrab and Kamp et al., since such were conventional mold closing/clamping means. It would have been further obvious to a skilled artisan to have provided the motor for driving the spindle-nut assembly as a hydraulic motor since such was a well known equivalent to the motors of each of Wohlrab and Kamp et al.

11. Claims 17-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Japanese Patent Document 11-138597 (Figures 3-5) in view of Holzschuh, as applied to claims 10, 13-15, 22 and 23 above, and further in view of either Pickel (U.S. Patent 5,540,495) or EP 1,162,053 (Figure 1).

Japan '597 in view of Holzschuh discloses the apparatus substantially as claimed, as described above, and Japan '597 further discloses a ball nut 28 and spindle 27 assembly for transferring the rotation of second motor 3 to the screw. Japan '597 does not disclose the spindle as being part of the screw shaft and cooperating with the nut directly operated by a rotor of the

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second motor, and does not disclose the first motor having a rotor mounted in fixed rotative engagement with the screw shaft. However, such an arrangement of the first and second motors cooperating the the injection screw shaft is known in the art, as evidenced by either Pickel or EP '053, and therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Japan '597 by providing the rotors of the first and second motors cooperating with the injection screw shaft via a fixed rotative engagement (first motor) and spindle nut directly operated by the rotor (second motor), as is conventional in the art as shown in either Pickel or EP '053.

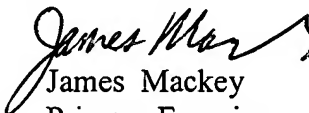
12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to James Mackey whose telephone number is 571-272-1135. The examiner can normally be reached on M-F, 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dr. Yogendra Gupta can be reached on 571-272-1316. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



James Mackey
Primary Examiner
Art Unit 1722

6/16/06

jpm
June 16, 2006